To: Rios, Gerardo[Rios.Gerardo@epa.gov]; Chen, Eugene[Chen.Eugene@epa.gov]
From: McKaughan, Colleen
Sent: Thur 4/6/2017 3:39:52 PM
Subject: FW: Maricopa County - Hickman's Tonopah
Central Valley Eggs and Hickman.pdf

Ex. 5 - Deliberative Process

Colleen

From: Alkon, Margaret
Sent: Wednesday, April 05, 2017 5:25 PM
To: Chen, Eugene <Chen.Eugene@epa.gov>; Rios, Gerardo <Rios.Gerardo@epa.gov>; McKaughan, Colleen <McKaughan.Colleen@epa.gov>; Christenson, Kara <Christenson.Kara@epa.gov>
Subject: RE: Maricopa County - Hickman's Tonopah

Ex. 5 & 7e

system also employed at Tonopah plus water sprays to further reduce PM10 emissions – certainly a less expensive alternative than the technology Hickman discusses in its response to Maricopa.

Thanks.

Details below:

Ex. 5 & 7e

Hickman stated in its March 21, 2017 answer to Maricopa County:

1. Through what mechanism(s) are emissions of regulated air pollutants discharged to atmosphere from the hen houses at the Tonopah Facility?

Primarily, if not exclusively, through the east-facing open end of each hen house.

2. Please describe the configuration and function of the fans at the Tonopah facility that were the subject of testimony?

Each hen house includes two primary sections, the area that houses the hens and the area where manure is collected. The two sections are separated by an internal wall. This wall includes approximately 40-50 thermostatically controlled fans. The fans are internal to the building. The fans serve two functions - they induce air flow in the hen section for purposes of ventilating and cooling the hens and they aid in manure drying and pest management in the manure area.

The San Joaquin Valley APCD Notice of Preliminary Decision for the Central Valley Eggs facility states (at pdf pages 6-7:

Each of the new laying hen houses will measure 651 feet x 90 feet x 43.5 feet and have a capacity of 327,000 birds. Additionally, each laying hen house will be equipped with forty-eight

1.5 horsepower exhaust fans, each with a total airflow rate of 26,200 cfm. Each pullet house will measure 684 feet x 111 feet x 25 feet and have a capacity of 350,000 birds. Each pullet house will be equipped with thirty-eight 1.5 horsepower exhaust fans, each with a total airflow rate of 26,200 cfm. All houses will be mechanically ventilated to remove moisture and carbon dioxide produced by respiration.

All of the exhaust fans will be located on the end of each house. The exhaust fans draw air into the building through slots located under the eaves along the perimeter of the roof and exhaust air out the end of each building. When ambient temperatures call for it, the inlet air will be cooled using water and evaporative cooling cells. The cold air from each side will be directed toward the ceiling, and will get pushed toward the center of each house. The cold air will then mix with the hot air inside the house before it descends into the area occupied by the birds.

Manure Management:

Wet manure from the new poultry houses will be conveyed to a segregated enclosure at the end of each poultry house, on the opposite side of the wall where the fans exhaust air from the poultry living area. The end of the house is partially open; a tarp covers approximately 40% of the upper part of the opening. Numerous belts under each tier of bird cages will collect and convey the manure from the front of the house to a floor conveyor at the back of the house. The floor conveyor transfers the manure to a covered incline conveyor located on the outside of the house. The incline conveyor carries the manure to an automated belt system that spreads the wet manure in three windrows to allow for efferent-controlled drying while maintaining a higher value of nitrogen and other elements, which lowers PM10 and ammonia (NH3) emissions. The manure drying and storage operation will take place under a covered area at the end of each house. Storing the manure under a cover at the end of each poultry house eliminates exposure to wind and rain.

The entire drying process will be managed to maintain a specific moisture content in the manure and retain as much of the nitrogen content as possible without creating a public nuisance. Additionally, the exhaust fans for the hen houses will operate 24 hours per day and will provide air flow for drying of the manure. The number of exhaust fans in operation will vary based on ambient temperature. The pullet houses require one exhaust fan to be in continuous operation. The layer houses require a minimum of three exhaust fans to be in continuous operation. An automated system turns on additional fans as temperature increases; above 100 degrees Fahrenheit all fans are in operation. The manure will be continuously removed from the aviary section of the houses and deposited in the manure drying and storage section of the houses where it will be held until it is viable for the applicable byproduct market then shipped via truck.

3. Hickman's statements in its March 21 letter compared to the San Joaquin Valley APCD draft permit.

Hickman stated in its March 21, 2017 answer to Maricopa County:

6. Are emissions from hen houses at other facilities with a similar building configuration typically captured and controlled?

No. We are not aware of any other layer operation at which the emissions are actually captured or controlled. It should be noted that many of those facilities include fans which are on the external walls of buildings, such that the materials passing through the fans are air pollutant emissions. Even in that configuration, however, the emissions passing through the fans are properly considered fugitive emissions. EPA policy provides that susceptibility to collection and control is an important consideration in determining whether emissions are fugitive or not. The capture and control of emissions from a hen house would require a massive and exorbitantly costly project, even for facilities of the older design where air pollutants are discharged to atmosphere through fans.

The San Joaquin Valley APCD Notice of Preliminary Decision for the Central Valley Eggs facility states (at pdf page 10):

VI. Emission Control Technology Evaluation

S-8841-1 and '-2 (Poultry Houses and Manure Handling Systems):

PM10, VOC, and ammonia (NH3) are the major pollutants of concern from poultry farms. The ventilation rate of the poultry houses affects the amount of VOC, PM10, and NH3 that is emitted from the houses.

All pollutants emitted from the manure are expected to be included with the emissions from within the poultry houses. Mechanical ventilation will decrease the moisture content of the manure. As the moisture content of the manure decreases, volatilization of NH3 from the manure will decrease. Once the manure is dry, emissions of VOC and NH3 are expected to be negligible.

PM10 Emission Control:

The in-house manure drying system will also act as a filter to reduce PM10 emissions from the houses. One study measured a greater than 80% reduction in PM10 concentrations from cage-free laying hen houses equipped with in-house manure drying systems.1

The end of each house is open where the exhaust fans blow air out. In order to help knock down

any solid particles that may be exiting the open ends of the houses, a tarp will be installed that covers approximately 40% of the upper part of the opening.

Central Valley Eggs is also proposing to install water sprays to help further reduce the PM10 emissions potentially being released to the atmosphere. The water sprays will be installed underneath a plastic tarp that is covering the top 40% of the opening at the end of each house. As a conservative estimate, it will be assumed that the water sprays will reduce PM10 emissions by an additional 50%2. It is not known if the tarp covering the top 40% of the opening at the end of each house will provide additional PM10 emission control. Therefore, as a conservative estimate, additional PM10 control will not be included for the tarp for the purposes of this project.

The total PM10 control efficiency can be determined as follows:

Total Control Efficiency= $[1 - ((1 - CE_{DryingSystem}) \times (1 - CE_{waterSprays}))] \times 100\%$

Total Control Efficiency= $[1 - ((1 - 0.8) \times (1 - 0.5))] \times 100\%$

Total Control Efficiency= 90%

The San Joaquin Valley APCD Notice of Preliminary Decision for the Central Valley Eggs facility contains the draft Permit No. S-8841-1-0 at pdf page 185 that contains an equipment description of "3,339,000 POULTRY RANCH CONSISTING OF SEVEN MECHANICALLY VENTILATED CAGE-FREE AVIARY LAYING HEN HOUSES AND THREE MECHANICALLY VENTILATED PULLET HOUSES" contains the following conditions (amongst others):

13. Each poultry house shall be completely enclosed and mechanically ventilated with evaporative cooling pads, fans, and a computer control system. [District Rule 2201]

14. Each poultry house shall be equipped with a belt manure aeration and removal system that is continuously removing manure from the aviary section of the house. [District Rule 2201]

15. The open end of each poultry house shall be equipped with a tarp covering approximately 40% of the upper part of the opening. The open end shall also be equipped with water sprays installed under the bottom edge of the tarp to reduce particulate matter (PM) emissions from the exhaust fans. [District Rule 2201]

16. The tarp and water sprays used to reduce PM emissions from the exhaust fans shall be inspected on a quarterly basis. The tarp and water spray nozzles shall be inspected thoroughly for rips, tears, leaks, clogs, holes, or any evidence of structural failures that result in excessive PM emissions and shall be repaired or replaced as needed. [District Rule 2201]

17. Permittee shall maintain records of inspections, maintenance, repair, and replacement of the tarps and water spray nozzles used to reduce PM emissions from the exhaust fans. The records shall include the dates of inspections and a description of any corrective actions taken. [District Rule 2201]

As we all know, District Rule 2201 is the SJVAPCD's SIP-approved New and Modified Stationary Source Review Rule (79 FR 55637).

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Margaret Alkon

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From: Chen, Eugene
Sent: Friday, March 24, 2017 9:21 AM
To: Rios, Gerardo <Rios.Gerardo@epa.gov>; McKaughan, Colleen <McKaughan.Colleen@epa.gov>; Christenson, Kara <Christenson.Kara@epa.gov>; Alkon, Margaret <Alkon.Margaret@epa.gov>; Lawrence, Kathryn <Lawrence.Kathryn@epa.gov>; Salazar, Matt <Salazar.Matt@epa.gov>; Chan, Janice <Chan.Janice@epa.gov>; TROMBADORE, CLAIRE <Trombadore.Claire@epa.gov>; Meer, Daniel <Meer.Daniel@epa.gov>
Subject: FW: Maricopa County - Hickman's Tonopah

Hi All-

Ex. 5 & 7e

Thanks,

Eugene

From: Richard Sumner - AQDX [mailto:SumnerR@mail.maricopa.gov]
Sent: Thursday, March 23, 2017 12:10 PM
To: Chen, Eugene <Chen.Eugene@epa.gov>
Subject: Maricopa County - Hickman's Tonopah

Eugene,

Attached are documents relevant to the Hickman's Tonopah facility (Permit #140062).

1. Current permit version
2. MC Hearing Board Order
3. Letter from MCAQD to Hickman's dated February 23, 2017
4. Response from Hickman's dated March 21, 2017

Richard A. Sumner, P.E. • **Permitting Division Manager**

Maricopa County Air Quality Department

1001 N. Central Avenue, #125 | Phoenix, AZ 85004

Located at the Central Ave. & Roosevelt METRO stop

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